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PEN AND INK DRAWING.*

By H. R. Robertson.

PRACTICAL INSTRUCTION.

DRAWING with pen and ink is so frequently called etching, and its appearance on paper is so often mistaken for a print from a copper-plate that some comparison of the technique of the two processes will not be out of place.

In etching proper the lines owe their different degrees of strength to two causes; firstly, the width of the lines produced by the use of needles of different sizes, and secondly, the depth to which they have been bitten into the copper. This latter cause regulates the quantity of ink in each line, so that if a passage in a plate is very slightly bitten, the lines printed from it will be very pale indeed. In pen-and-ink drawing we also employ the varying width of the line as a means of producing effect; and to correspond to the second cause we can dilute our ink with water, so as to make it as pale as we will. For rapidity of manipulation and perfect freedom of action the needle is unsurpassed, as it glides over the metal in all directions without the slightest trouble; but the line is uniform in character, there being no elasticity in the point of the needle such as is possessed by that of the pen. Though incapable of being handled with such celerity as the needle, yet the pen has the great charm of accentuating a line in parts, resulting from the power of separating its nibs, and thus widening the lines where required.

In outline drawing the common practice of thickening the line on the shaded side is not to be advised, as it is not based upon any sound reason but is rather a device for smartening up the effect. Whether the extra thickness of line is added beyond or within the true contour of the object, it is apt to suggest a falsification of the form; and as the extreme edge of the shaded side of most objects is seldom their darkest part, the practice is so far incorrect. Indefensible as this practice is, it is nevertheless adopted in many series of school examples, otherwise excellent in every respect; such, for instance, as the elementary copies so much used in France, known as the Jean Cousin, L'ecolier Parisien and Raphael. This mode of adding effect to a poor-looking drawing seems to be a survival from the time when it was a great part of the drawing-master's work to touch up his pupils' productions in order to please their parents. On the other hand it is wearisome to see very great care bestowed upon the attempt to make the lines everywhere exactly of one thickness. When this is very rigidly done, the result is a hard wiriness that is no doubt scientifically right, but is apt to look unfeeling. A little emphasis here and there is sure to take place if the draughtsman is thinking, as he should be, more of the properties of the object he is portraying than of his own manipulation. Should it be desired to produce a bold outline of uniform width, use might be made of a "stylographic pen," such as Goodall's well-known "Rapid Writer."

The Woman in White.—F. Walker, R.A.

Mr. Ruskin, in his "Elements of Drawing," sets the pupil down for a considerable time to the simple task of laying a flat tint by means of pen and ink. He advices the student to draw a square and try to fill it in with crossed lines so completely and evenly, that it shall look like a square patch of gray silk or cloth, cut out and laid on the white paper. He is to cover it quickly, first with straightish lines in any direction he likes, not troubling himself to draw them very closely or neatly. These lines are to be crossed with other sets of lines in all directions, care being particularly taken that each set of lines be in turn allowed to dry thoroughly before being crossed by another set. In this exercise swiftness of execution is recommended to avoid the dot of ink liable to be left by the pen at the end of any line which is drawn slowly, even though the pen-knife should be occasionally called into requisition to remove the ends of such lines as have gone over the edge of the square. The pen-knife should not, however, be used till the last thing; as, where the surface of the paper has been disturbed by it, fresh lines are apt to run into blots.

Spanish Lady.—Madrazo.

A few delicate washes added to an elaborate drawing in Indian ink will often produce a good effect by blending some of the tints together; and by softening the shaded parts will somewhat obliterate the evidence of excessive labor. Such washes must, however, be applied with caution, care being taken not to go over any part a second time while still wet. If the brush is thus used with discrimination, the result is not unlike that produced by *retroussage* in the printing of etchings (see "Art of Etching," p. 46), and like it is condemned by the narrow-minded as illegitimate. Parts that are too heavy may be lightened somewhat with india-rubber, and still more with gentle use of ink-eraser.

In Mr. Hamerton's "Graphic Arts," attention is called to the value of "the black blot" as a technical means in pen-and-ink drawing. On this point he writes as follows: "Every reader who is at all familiar with the analysis of works of art must be aware already that in most drawings a great number of light shades are lost in pure white paper. I may call his attention to the fact, which he knows quite well already, that pure white paper is absolutely *flat*, that there is no gradation in it whatever. We see, then, that in tolerating white in a drawing, we tolerate the merging of many shades in one, which stands for them generally, as the word "aristocracy" stands for all the higher classes; and besides this we tolerate an untruth, the absence of gradation, which is contrary to the habit of nature. There can be no valid reason why exactly the same thing should not be done at the other end of the scale. We have flat whites in abundance; why not admit flat blacks? All that the artist means by them, is that at those places the darks of nature went down below a certain level. The holes and corners of picturesque buildings are darker than Indian ink with the light upon it, and so are the shady side of all dark draperies; other darks come nearly up to Indian ink, and others (grays and browns in nature) are just equivalent to it. The flat black represents all these together, quite as fairly and legitimately as the flat white represents luminous grays and greens."

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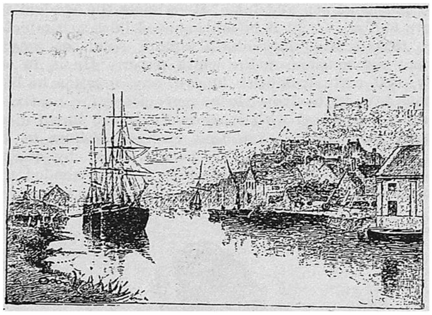
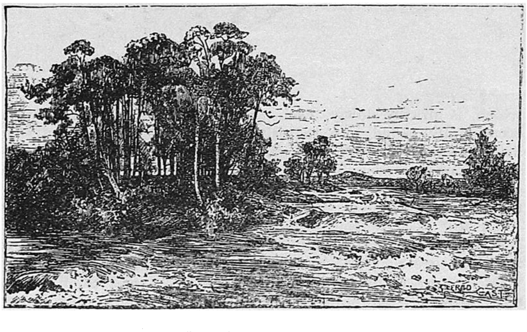

ARUNDEL.—VICAT COLE, R.A.

Mr. Herkomer's "Happy Old Age" is a very effective instance of the use of the black blot. Our illustrations by Sir John Gilbert and Frederick Walker are also successful examples of similar boldness in the employment of absolute black.

Mr. Ruskin strongly advocates the invariable use of a perfectly black ink, recommending, for instance, ordinary writing ink that has been allowed to stand till it has become thick (but not so much as to clog the pen); believing that "if you cannot gradate well with pure black lines, you will never gradate well with pale ones." I confess that I see no reasonable objection to the use of pale lines for tho purpose of obtaining gradation; and the example selected by Mr. Ruskin, in illustration of his method, is somewhat unfortunate as an argument. He tells the pupil to look at any common woodcuts in the cheap publications of the day, and observe how gradation is given to the sky by leaving the lines farther and farther apart. The fact is, that such gradation is alwags assisted in the printing by what is called "overlaying" the block, a system by which the pressure is regulated in such a manner as to print some parts of the block with very much more ink than others. By this means the lines in the sky are often of a decidedly pale grey, compared to the rich blacks of the dark parts or the subject. An impression of a wood-cut in which all the lines are of equal blackness is called "a rough pull," and is flat and ineffective, the sky and other delicate parts suffering most evidently from the absence of such tender gradation as can be best given by relative paleness in the ink.



THE DARK ISLAND.—ALFRED EAST.

A very smooth hand-made paper is perhaps the best surface for pen and ink drawing. The granulated surface of rough paper is apt to give the lines a broken appearance, and to hinder the free movement of the pen. There is some *old* Whatman paper existing which is excellent for the purpose; it is rather thin, and has a beautiful surface which, however, stops short of the absolute smoothness of hot pressed paper.

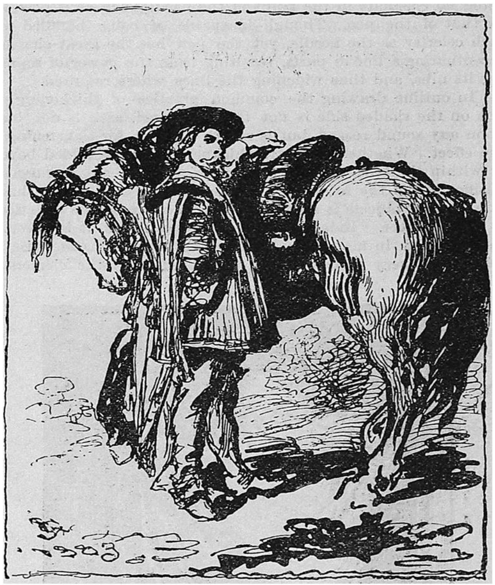
Bristol boards are perhaps the most generally useful, while London boards are to be preferred for any work not especially minute in detail. These cardboards have the advantage that the drawings made on them do not need to be mounted afterwards, and so they avoid all risk of damage while being damped and stretched.

The enameled paper known as "clay-faced" has come into use of late years, especially for drawings to be afterwards reproduced by photo-mechanical processes. It is said to be a coating of china clay with which the surface of the paper is prepared; and their specialty is that black lines can be easily erased with a penknife, while white lines or dots can be added with a needle in any parts that happen to be too dark.

Messrs. Perry & Co., manufacture some pens expressly for drawing, which they have numbered thus: 600 crow-quill pen, 601 etching pen, and 602 tracing pen, all these being admirably suited for fine work.

Messrs. Gillott's lithographic crow-quills are much used, and this firm makes a pen specially for drawing, No. 303, and another good pen, which they call extra-fine.

The penholder sketched on this page is made by Messrs. Woodward, who call it IXL; it is convenient to the fingers, as being a holder of the usual size, while the pen is a small crow-quill. One advantage of such a pen as Gillott's extra-fine over the crow-quill is that it does not require replenishing with ink so often. It is a good plan to use different pens for different parts of a drawing, just as an etcher uses different needles on different parts of his plate. All varieties of writing pens can thus be utilized, even occasionally the broad-nibbed J.


A TRUMPETER.—SIR JOHN GILBERT, R.A.

The preparation known by us as Indian-ink is really of Chinese manufacture. The true China ink will break to almost a polished surface, and is moderately scented with musk. The counterfeits generally overdo this; and some neglect it altogher. The true ink is blackest when brought to a deep shade, but in the fainter shades it inclines to brown. The counterfeits have more substance towards the deep shades than the genuine. The true preserves a greater degree of transparency than the others. Indian ink has one quality which is sometimes found to be a disadvantage. It is extremely difficult to remove when once applied to the paper, being very little affected by the use of a wet brush, sponge, or blotting paper. In this respect, it is the antithesis of charcoal gray, which is a beautiful pearly gray color for monochrome, but attaches itself to the paper so slightly that a second wash, if not very dexterously applied, is pretty sure to disturb the first.

The following particulars about Indian ink, ivory black, and lamp black, are extracted from "Field's Chromatography for Artists."

"Indian ink is brought to this country in oblong cakes of a musky scent, ready prepared for use with water. It varies considerably in body and color.

"Ivory black is obtained by charring ivory in close retorts. When well made it is the richest and most transparent of all the blacks, and is perfectly durable. If, however, insufficiently burnt, it is brown, and if too much burnt, becomes opaque and loses intensity. Ivory black is a full silky black, and is serviceable where the sooty density of lamp black would be out of place. It has a tendency to brown in its pale washes."

A Vintage Wine.—Simonetti.

Lamp black is a smoke black, and is said by Mr. Field to be obtained by burning resins or resinous woods, and is defined as a pure vegetable charcoal of fine texture. I believe, however, that at the present time, lamp black is usually manufactured by the burning of some of the many varieties of petroleum, chemically called hydrocarbons. Perhaps for the finest qualities, resinous woods may still be employed. It is not quite so intense and transparent as ivory black, but less brown in its pale washes.

Liquid brown ink is gradually becoming popular, particularly for the purpose of perspective elevations of architects. Washes of this ink can be used along with the ordinary work of the pen. Capital examples of this employment of brown ink have been exhibited lately at the Royal Academy by Mr. Ernest George. When compared with the other elevations outlined and tinted either with Indian ink or sepia, those in brown ink certainly look the most effective. The warm tone of the brown ink, as used in this manner, is decidedly agreeable. These drawings of Mr. George reproduce very fairly by photo-lithography, though with some slight exaggeration of the lighter washes.

The superiority of brown over black for the purposes of decorative effect has recently been very fully recognized in the selection of the ink used in printing such etchings as those of Mr. Macbeth after Mason, Pinwell, and Walker.

Besides liquid Indian ink and brown ink ready for use, Messrs. Winsor & Newton keep cakes or sticks of the best Nankin Indian ink in great variety. The following is a list of their selection varying in price from fourteen shillings down to sixpence per stick: extra large double dragon, hexagon, super-super, mandarin, pearl, stork gilt, square gilt, lion's head, besides smaller sizes of several of these brands. We may mention that the super-super and lion's head brands are in practice found to be the most generally useful.

REPRODUCTIVE PROCESSES.

The immense strides made lately in the processes of mechanical reproduction tend to show that the art of pen and ink drawing is becoming every day more worth attention on its own account. As a definite method of artistic expression, it seems not unlikely that, in the future, as the processes alluded to approach perfection, the intermediate part played by the wood-engraver will be superseded by them; and that all our illustrated newspapers and periodicals will only require suitable designs from artists for photographic reproduction.

The most direct way, however, in which pen and ink drawings may be made for the purpose of reproduction, is on lithographic stone, zinc, or by the use of what is called "transfer paper" in connection with lithography or zincography. This transfer paper is yellow-colored in appearance, being prepared for its purpose by being coated with a mixture of gum arabic, gamboge, etc. The preparation admits of the use of the ordinary black-lead pencil for sketching in the design, or a tracing may be made on it by means of red chalk tracing-paper that has been made in the most simple manner without any greasy admixture. The drawing is made with lithographic transfer ink, when it must be borne in mind that the process takes no notice of differing degress of black in the line, but only in the width of the line. The drawing is transferred by the paper being damped at the back, and placed face downwards on the lithographic stone or zinc plate, and then passed through a press of considerable power. The paper can now be peeled off, and the drawing is left adhering to the stone or plate, from which it can be printed in the usual manner.

There is, besides the ordinary yellow transfer-paper, another kind, known as "French transparent," which serves the purpose of a tracing as well as a transfer paper. The use of the sable brush is preferable to that of the pen, which is liable to abrade the preparation on the surface of these papers.

Great care must be observed in using these transfer papers, not to touch the surface with the hands, as the slightest soil of grease, although it may not be apparent, will ink up black when transferred.

Messrs. Cattell, the well-known zincographers, recommend the ink called "Vanhymbeck's Autographic Transfer Ink," and they give the following simple directions for mixing the ink: "Warm a small saucer over the gas or a candle, then rub the ink round it until a sufficient quantity has adhered to the saucer, which it will do, in the form of a thick paste; then add a few drops of distilled, rain, or boiled water, mixing well with the finger until liquid enough to flow freely from the brush or pen; not too thick, or it will smash in transferring, nor too thin, or the lines will not come out properly."

Head.—Lalauze, after Frans Hals.

In pen and ink drawing on stone, or on paper for lithographic transfer, it must be recollected that the strength of the line depends entirely upon its thickness, as the ink when printed is everywhere uniform in blackness; so that such work corresponds to an etching produced with only one immersion in the acid, and to a pen and ink drawing on paper where the pen is always kept fully charged with ink of the same intensity. The same thing also holds good with reference to the pen and ink drawings so frequently made for one or other of the phototype processes now so much employed—in Mr. Blackburn's "Academy Notes," for instance.

The best ink with which to draw for these processes, or more more correctly, better than any ink, is the preparation known as "Stephens' Ebony Stain." It has more body than any simple ink ; while, at the same time, it is not thickened to such a degree as to prevent the pen or brush from making the very finest lines. I have tried many good writing inks, such as "Carter's Raven Black," but have found nothing in strength to compare with the Ebony Stain. Some draughtsmen mix a little gamboge with Indian ink, so as to render the black more suitable for photography. An ink inclining to blue should be particularly avoided, as not likely to photograph well.

The paper for "process" drawing should be very smooth, such as bristol board. The best thing, however, is a particular kind of prepared cardboard known as "clay-faced," which is sold at the establishments that supply materials for these processes. Messrs. Willis & Co., of Long Acre, keep this prepared cardboard in stock.

THE ADVENT OF WINTER.—F. SANDYS.

For such work in pure line as is required to be very exact for purposes of publication, it is not unusual to employ a finely-pointed sable brush instead of a pen, the result produced being so similar that few would imagine they were not looking at a pen and ink drawing. The sable brushes known as tracers, liners, or riggers, are specially adapted to this kind of work, all of them being very long in proportion to their thickness. Any small sable brush may be trimmed with a sharp penknife to the required proportion as shown in the accompanying illustration. Their shape facilitates the task of shading by means of parallel lines of regular width. It is by no means easy at first to use the brush in this way as a substitute for the pen, and it is only suitable for work that is to be done very deliberately. Were one to attempt sudden alterations in the direction of the line, such as are easy enough with the pen, the result with the brush would most probably be a succession of blots. With practice, however, considerable rapidity may be acquired ; and those who have once become accustomed to the use of the brush as a substitute for the pen, are never known to recur to the use of the latter.

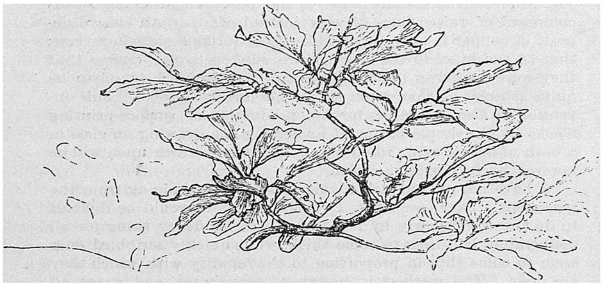
In this method of working, such pigments as Indian ink, lamp black, ivory black, are used instead of fluid ink, the only exception being in favor of Stephens' Ebony Stain, which is equally suited to the pen or the brush. From experiments that I made in order to test the relative intensity of different inks and pigments, I came to the conclusion that lamp black as prepared for water color and used with the brush produced the most perfect black of all. The apparent reason for this is, not that the pigment is really deeper in shade than the others; but that owing to a complete absence of shine on its surface it takes no reflection from surrounding objects, and so remains a perfectly dead black at whatever angle it may be held to the light. In practice, Stephens' Ebony Stain, though yielding a somewhat shining surface, is found to photograph quite satisfactorily. The presence of red in this preparation, probably logwood, which may be readily seen by adding a few drops to a tumbler of water, no doubt materially improves its quality as a color intended to photograph as dark as possible.

In making designs to be reproduced by photo-mechanical processes, it is usual to draw them considerably larger than they are to be eventually printed. This proceeding, by rendering all the lines finer and closer, adds a general appearance of delicacy and finish to the whole. Experience, however, shows that this added finish of execution does not necessarily mean finish of effect, for where great difference of scale exists between the original and the reproduction, the balance of tone is altered and frequently upset. A warning on this subject appeared in *Harpers' Magazine*, from the pen of Mr. Thomas Cole, one of the ablest living wood engravers. He writes, "The secret of so many recent failures of engravers to do justice to the artist lies in the fact that artists make their drawings too large, and when these are reduced by photography and put on the block very small the engraver is put to a great task in striving to reproduce the original effect; and he fails in the endeavor because through the reduction in size the effect has been lost!" The grays, which will probably compose the chief part of the design, remain substantially the same, while the whites and blacks diminish in importance, so that the usual result when a drawing has been made on a large scale, is, that the reduction is pronounced weak or gray throughout.

In my own practice, I generally like to make my drawings for "photographic reduction" to a scale of about twice the linear measurement required; in other words, four times the area. If, for instance, the size of the illustrations is to be six inches in height, I should prefer to make my drawings twelve inches; but I should be careful in these cases to keep the work very open, and the white and black spaces larger than would look well on the scale I was using. To work in this way requires some effort and constant self-control, so as not to put in too much work; the result is that most artists find it on the whole less troublesome to work on a scale nearer to that of the intended reduction. Mr. Staniland and others, who have been very successful in this class of work, find that if the linear measurement is one-third larger than the reduction, the latter is found to be sensibly

STUDY.—INDUNO.

improved in the direction of delicacy without much alteration of general effect. Supposing, as before, that the illustrations are to be six inches in height, the artists alluded to would probably draw them about eight inches. The reduction in this case would be half the area, though a casual observer would not fancy it to be nearly so considerable. I may mention that the original of Mr. East's impressive drawing of the "Dark Island," measured about thirteen inches by nine, and my own pen-and-ink drawing of "Grig-weels," nearly filled a page of note paper. Mr. Blackburn has on the whole found that those drawings which do not exceed the size of an ordinary sheet of note paper come out best on the small scale to which they are reduced in "Academy Notes."



STUDY.—SIR F. LEIGHTON, P.R.A.

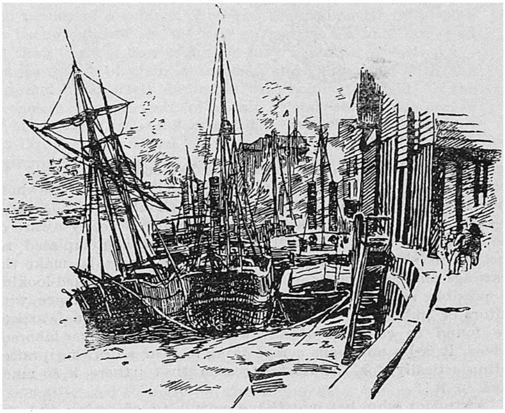
The question as to how many parallel lines in a given space will present to the naked eye the appearance of a flat tint or wash, becomes of interest when considering this part of our subject. From the different examples that I have examined with this view, I have found that from 108 to 120 in the inch are generally required to produce the effect. These numbers will no doubt vary in particular cases, owing to the relative width of the black and white spaces, and to the varying powers of the eyes of different persons; and they will vary in *all* cases with the distance of the lines from the eye. The most curious thing in the matter of these experiments is the comparatively sudden change in effect that occurs when the requisite number of lines is reached. Thus, perhaps, when comparing the effect of 96 lines to the inch with that of 108, it will appear as if the proportionate difference must be very great indeed, and would probably be guessed at a fourth less, instead of being, as it is, only one ninth. When laying with the pen or brush an even shade consisting of parallel lines, it will be found that about eighty lines to the inch are as many as can be laid without the aid of the magnifying glass, or devoting over much time to mere minuteness. At this rate an inch and a half would contain 120 lines, and as that number of lines when reduced to an inch would, as stated above, cause the effect of the separate lines to merge into that of a flat tint or wash, we find that the degree of reduction desirable on this ground is one-fourth, which is that already mentioned as having been frequently adopted by artists on general grounds.

HER FIRST VISIT.—R. BARNES.

It may seem paradoxical to allege that extremely fine work looks still finer under a glass of high magnifying power; but the fact seems to be that in some respects the hand of the practiced draughtsman outstrips his eye. Under the magnifying glass it may be noticed that in the case of very closely laid parallel lines, the white spaces between the lines are generally twice as wide as the lines themselves; and so that the lines are relatively thinner or finer than they appear to the naked eye

A curious fact has come under my observation while trying upon my friends the effect of tints composed of parallel lines; my object being to see how many lines in a given space were required to suggest the appearance of a wash of gray color. I was, of course, prepared to find considerable difference in the clearness of vision of different individuals, all of whom supposed themselves to have exceptionally good sight. The strange point that came under my notice is that to many persons the same tint of parallel lines produced quite a different effect when the paper was held so as to present the lines horizontally, from what it did when the lines were perpendicular; the commonest case being that what appeared a flat wash when the lines were horizontal, would resolve itself into distinct lines when turned, so that the lines were perpendicular. In other words, one might put it that perpendicular lines are more easily seen than horizontal ones. In all eyes the central parts of the retina are more sensitive than the peripheral parts; and the above-described difference of effect may be due to the fact that, in most eyes, this decrease of sensibility takes place more rapidly in a vertical than in a horizontal direction.

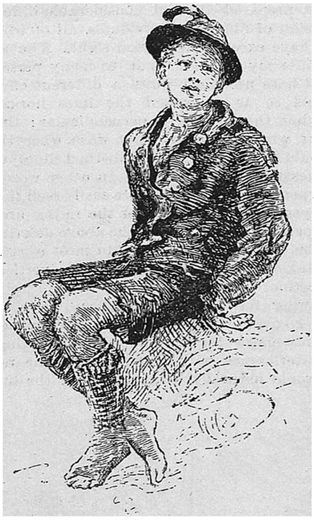
When drawing for "process," I would give the reader a caution not to go over the light parts of the drawing with either pen-knife or ink-eraser for the purpose of adding delicacy of effect. The interference with the photographic result is much greater than would naturally be anticipated; the lines after this treatment, tending to become broken, (or rotten as it is called) to an extraordinary degree. This course is the more to be avoided, as after the process block is completed, the delicate parts, if too dark, can easily be rendered greyer by being crossed with finely engraved lines; but no breaks in a line can be afterwards supplied.



HULL.—W. L. WYLLIE.

For photo-type reproduction a combination of pen-and-ink drawing with a tint composed of ruled lines is frequently adopted. This is an easy method of obtaining tone, and getting rid of the unfinished appearance that a slight pen-and-ink sketch is apt to present. As the ruled tint can be scraped away in parts, the high lights can be expressed with great facility. Several designs executed in this manner have appeared in Mr. Blackburn's "Academy Notes;" for instance, "The Secret," by E. Blair Leighton, in the volume for 1885. Reference to this example will, I think, show that the result is not quite satisfactory, owing to the various tones not blending altogether harmoniously; the very great difference in the technical methods by which the varieties of tone are produced is no doubt the reason. It is possible that with great care harmony of execution might be attained; but it would take an amount of slow deliberate work that would be better bestowed by adopting some other mode. The fact is, that patches of white on a tint are apt to have an artificial effect, unless the high lights are led up to very gradually. Instances of this failure in harmony of effect are to be noticed in the many lithographs that used to be printed on a buff tint, with the high lights scraped out to imitate the effect of white chalk. These pretty lithographs, which were so much admired in the last generation, are very little esteemed at present; and we will hope that it is owing to an improved taste intolerant of their prevalent fault of sacrificing truth to superficial qualities.

It might seem almost unnecessary, when writing on the subject of the reduction of drawings by photography, to dwell on the fact of the obvious increase of the number of lines in a given space; but it seems in practice extremely difficult at first to make the necessary allowance for the difference in this particular that must take place. I have heard more than one accomplished artist complain bitterly of the loss of style incurred by the mere fact of having employed more lines to produce a certain effect than were really needed. When the reduction is to be considerable, it must be borne in mind that the treatment on the large scale, to be really right for the purpose, should not look perfectly right when the intention is not understood. It should be decidedly coarse in execution in parts; and, as I have elsewhere remarked, the principal lights and darks should be exaggerated in size. Even to those draughtsmen who are perfectly aware of the changes in effect that will result from the contemplated reduction in size, the temptation sometimes arises to make the drawings on the large scale as attractive and as finished-looking as possible, so that they may pass muster at a glance with editors or publishers. Few people, except professional artists, are found to complain of any work of art being over-labored; indeed, it is by no means a rare thing to hear a drawing praised enthusiastically for the absurd reason that "there is so much work in it!"


BOY RESTING.—H HERKOMER, A.R.A.

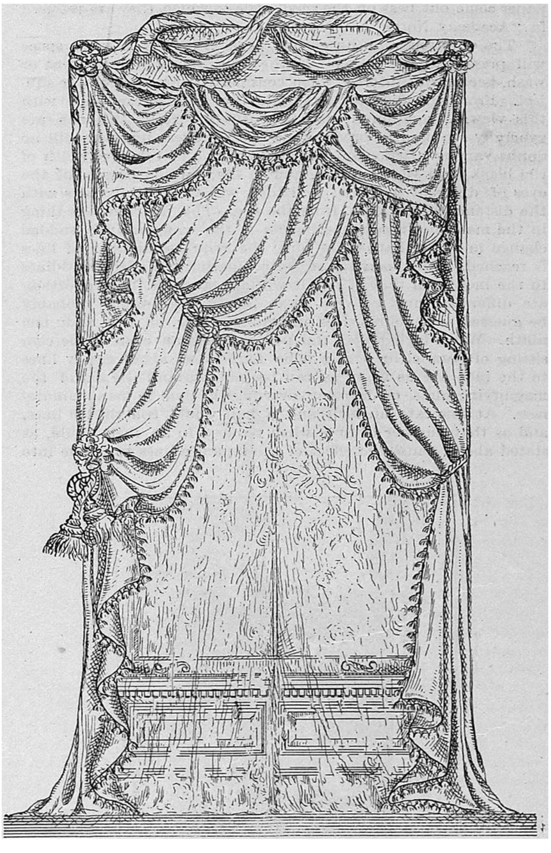
A student who has not the opportunity of seeing the originals of successful reductions by "process" might perhaps learn something by inverting the method. By choosing a good published example, and having some photographic enlargements made from it, he would see just how much more open the lines would appear, according to the scale used; and so he could regulate his own proceedings with tolerable certainty.

While considering this aspect of our subject, I would point out that many engravings from drawings which are commonly spoken of as pen-and-ink sketches are not really so. For example, it is not unusual to hear John Leech's sketches in *Punch*, spoken of in this way; and certainly some of his later ones are not unlike what might have been done with a quill pen. The fact is that they were drawn on the wood with gray lead-pencil, and were not at all powerful-looking in that state, depending as they did for their after-effect more upon the actual width of the lines than their tone on the wood.

GRIG-WEELS.—H. R. ROBERTSON.

A curious and ingenious invention has recently come to u from Australia, known as "Crocker's Hot Pen." A hollow pen-holder, filled with wax, is connected with a gas supply by a piece of India-rubber tubing, so that a tiny jet of gas is kept burning just above the pen. This melts the wax and enables it to pass down the nibs of the pen in a fluid state. The drawing is made upon glass or other smooth cold surface, upon which the wax solidifies the instant it leaves the pen. The drawing is thus composed of raised lines of wax instead of ink. An electro deposit of copper is made upon this which forms a plate in reverse; that is, the lines in the electro are sunken to the degree that they were raised in the original, and the depth is found to be quite as great as that produced by etching with acid. This invention is also available for the production of surface-printing blocks by the simple means of immersing the drawing on glass in a bath of fluoric acid, when all the parts not drawn upon will be lowered by its corrosive action.

I have not myself tried this process, but judging from the specimens I have seen of it, I conclude that it would be difficult to do fine work slowly by it; the natural tendency being for all deliberately laid lines to come thick, while quickly scribbled ones seem to come thin in proportion to the rapidity with which they are done. The method is, however, very simple, and saves all the trouble connected with the use of acid; and I do not see why a plate thus executed should not receive the addition of lightly etched work where desirable, or delicate lines done with the dry-point.


SCHEME FOR PARLOR DRAPERY IN MODERN FRENCH STYLE, DESIGNED BY JOSEPH P. MCHUGH.

TO MAKE A POLISH FOR CARVED CABINET WORK.—Dissolve two ounces of seed lac and two ounces of white resin in one pint of spirits of wine. This varnish or polish must be laid on the work when warm, and if the wood can also be warmed slightly, it will be very much better. At all costs moisture and dampness must be avoided. It must be used with a brush for the standards and pillars of cabinet work, but the carved portions are polished as follows:—Varnish the parts with the common wood varnish, and having dressed them off where necessary with emery paper, apply the polish employed for the other portions of the work.